DOCUMENT RESUME

ED 133 050 PS 008 969

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TITLE Entrance Age to Kindergarten and First Grade: Its Effect on Cognitive and Affective Development of Students.
PUB DATE [70]
NOTE 19p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Academic Achievement; *Age Differences; Age Grade Placement; *Early Admission; *Elementary Education; Emotional Development; Grade 1; Kindergarten; Literature Reviews; Research; Sex Differences; Social Development; *Student Adjustment; *Success Factors

ABSTRACT

This paper reviews literature and research on the effects of age of initial entry into schooling, citing over 20 studies from the 1930's through the 1970's relating entrance age to academic success and personality development. Studies investigating the effect of early entry into first grade on academic achievement have indicated that not only chronological age, but mental age, adjustment, and I.Q. are determining factors in success. Other researchers have stated that although achievement is related to entrance age, this does not mean that raising the minimum entrance age would prove profitable. Research contrasting children matched on sex, intelligence quotient, socioeconomic status, and schools attended has indicated that children who entered at a later chronological age scored consistently higher on achievement ratings than their younger classmates; another study found that the difference in academic achievement between early and late school starters was not statistically significant. In research on early entry as related to school adjustment, findings reported showed that a greater percentage of children who entered kindergarten or first grade at an early age had adjustment problems compared to later entrants. Another study indicated that earlier entrants had more speech defects, nervous indications, and personal and social maladjustments than did older entrants. Sex differences in the variables influencing adjustment have also been found. (Author/SB)

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ENTRANCE AGE TO KINDERGARTEN AND FIRST GRADE: ITS EFFECT ON COGNITIVE AND AFFECTIVE DEVELOPMENT OF STUDENTS

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PS008969

REVIEW OF LITERATURE AND RESEARCH

The purpose of this paper is to review the literature and research related to the admission policies of public school districts, which control initial entrance to school. Studies relating entrance age to subsequent elementary school achievement and personality of the students are cited.

Compulsory school attendance laws, statutes which mandate uniformity in minimum entrance age requirements and public pressures have kept first grade entrance age within a fairly narrow range.

The National Education Association conducted a survey which involved four hundred seventy-nine school districts. These districts had enrollments of twelve hundred or more students.

> The most frequently reported minimum entrance age requirement was five years of age by December 1 and the second most frequent mentioned age was five by January 1. Thus, 57.4 percent of the responding districts require a kindergarten entrance age of four years, eight or nine months, by the opening of school.[1]

An experimental study dealing with the chronological age of children when they enter school was made by Elizabeth Bigelow in Summit, New Jersey, in 1934. The study was based on one group of eighty-eight children who entered Grade 1 before they were chronologically six years of age and another group of thirty-nine children who entered when they were between the chronological age of six years and six years and four months. Bigelow categorized the students according to chronological age and mental age and then studied academic achievement. Her results are:

1. A child less than six years old, chronologically with an intelligence quotient of 120 or over will probably succeed, but personality factors should also be considered.

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[1]National Education Association, Entrance Age Policies (District of Columbia: Educational Research Service, 1968), p.2.

2. If a child is below six years old chronologically and has an intelligence quotient below 110, his chance of success is small. . . .
3. Children below six years old chronologically with intelligence quotients of 110-119, inclusive, and children chronologically between six years old and six years and four months old with intelligence quotients of 110-119, inclusive, have a fair chance of success. . . . .
4. If a child is chronologically between six years and six years and four months old and has an intelligence quotient of 110 or over, he is practically certain to succeed in school.
5. If a child is below six years old chronologically and has a mental age of six years and ten months or above, he is practically certain to succeed in school. If his mental age is between six years and eight months and six years and nine months, inclusive, he has a good chance of success.
6. A child chronologically between six years and six years and four months of age has a good chance of success if his mental age is six years and four months or above.
7. A child who is chronologically below six years and four months of age and whose mental age is below six years has practically no chance of success.[1]

A similar study was conducted by H. M. Partington to determine the relationship, if any, between the chronological ages of pupils on entering the first grade and their later scholastic success. There were two hundred eighty-four children in the study. Two types of data were assembled: (1) the percents of pupils entering school at each age who later made low, average, and high achievement, and (2) the percents of pupils entering

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[1]Elizabeth B. Bigelow, "School Progress of Under-Age Children," The Elementary School Journal, XXXV (September, 1934), pp. 186-192.

at each age whose later achievements were lower than their intelligence would indicate, commensurate with their intelligence, and higher than their intelligence would indicate.[1]

The following conclusions were drawn:

1. Many of the younger children (those entering the first grade as early as 5.0 to 5.5 years of age) are not only capable of, but do achieve excellent results.
2. While many of these brighter children in the youngest group do good work, we find here the largest percent of those who are capable of doing better. Apparently a low chronological age is a handicap to many children in school, and with greater maturity they might achieve better results in the same grade with less strain.
3. Apparently it is not wise to hold back the older pupils (those who enter the first grade over 7 years of age) even though their achievement is low.[2]

Gertrude Hildreth, a consulting psychologist, reported some of the practices relating to age standards for first grade entrance.[3] She stated that six years is the age at which the typical young child is considered to be ready for broader experiences than his home background provides. It is at this age that the child can work and play with a group of children about his age, under the guidance of adults other than his parents.

Miller also investigated the relationship between fifth grade achievement and the effect of under-ageness.[4] There were

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[1] H. M. Parington, "The Relationships Between First-Grade Entrance Age and Success in the First Six Grades", The National Elementary Principal, XVI (July, 1937), pp. 298-302.

[2] Ibid., pp. 301-302.

[3] Gertrude Hildreth, "Age Standards for First Grade Entrance", Childhood Education, XXIII (September, 1946), pp. 22-27.

[4] Vera V. Miller, "Academic Achievement and Social Adjustment of Children Young for Their Grade Placement", The Elementary School Journal, LVII (February, 1957), pp. 257-263.

thirty-seven children in this group who were young for the grade. Forty percent of these children were among the top fourth in the district in total achievement, whereas only six percent were below the average. She further states that children young for their grade can have a good chance for success.

Devault substantiated these findings when he conducted a large scale study of underage first graders. Underage first graders were operationally defined as those children who entered the first grade between the chronological ages of five years eight months and six years. The study involved five hundred fifty-three underage students who were in grades two, four, and six. These children attended schools which were located in middle and/or upper status Anglo-American neighborhoods. Some major findings of the study include the following:

1. Pupils with high mental age had higher achievement and adjustment scores than pupils with middle or lower mental age.
2. Generally, pupils more than two months underage had lower achievement test scores than the normal-age pupils or those pupils less than two months underage.
3. Pupils from one day up to two months underage had achievement scores comparable to those of the normal-age pupils.[1]

Baer conducted a study to investigate whether or not a child who begins school underage experiences similar problems and achieves the same level of development as if he had waited a year to enter school.[2] Seventy-three children with birthdates in November and December were matched with seventy-three children with birthdates in January and February. These children were in the same school grade and also had entered kindergarten in September of the same

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[1]M. Vere Devault, Elmer C. Ellis, Edward M. Vodicka, and Henry J. Otto, Underage First Grade Enrollees (Austin: The University of Texas, 1957).

[2]Clyde J. Baer, "The School Progress and Adjustment of Underage and Overage Students", Journal of Educational Psychology, XLIX (February, 1958), pp. 17-19.

year. The groups were matched on the basis of intelligence quotient and sex, and in about two-thirds of the cases, the school entered.

During their eleventh year of school, Baer compared the groups on the following basis: physical size, grade level attained, number of problems that were marked on the Science Research Associates Youth Inventory and scores on the Guilford-Zimmerman Temperment survey. Comparisons were made of grades in elementary and high school subjects, achievement test scores, teacher rating on personal traits, and number of absences. This data was taken from the cumulative records.

He found that the overage children made significantly higher grades and significantly higher scores on achievement tests in reading, arithmetic, and social studies. These overage children also were rated higher on personal traits by their teachers and were significantly more successful in maintaining regular yearly grade promotion. Before concluding that the underage children should wait until the next year to begin school, it should be noted that the majority of these children made average school progress and received average ratings by their teachers on personal traits.

Similar results were attained in a study by Hampleman which involved fifty-eight sixth grade students. He divided this group into two comparison groups to determine whether pupils who start school at the age of six years four months or over were better readers than those who start school below the age of six years four months. The late school starters achieved slightly better than the early school starters and the difference between the groups was not statistically significant, but Hampleman states that "school administrators can advise parents that their children have a considerable better chance for success in reading by starting them to school a few months later, rather than a few months earlier."[1]

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[1]Richard S. Hampleman, "A Study of the Comparative Reading Achievements of Early and Late School Starters", Elementary English, XXXVI (May, 1959), pp. 331-334.

Clive Beattie conducted a study which consisted of 387 students who had attended Portage Township School Corporation from kindergarten through the third grade. The purpose of this study was to determine if there were significant differences in academic achievement from the first to the second grade and also from second to third grade. The tests used were the Stanford Achievement Test and the Otis-Lennon Mental Ability Tests. The students were divided into four groups according to their chronological entrance age at the time of school entry. After analyzing the data it was found that the older school entrants were significantly superior to younger school entrants in academic achievement at grades one, two, and three. It should be noted that a comparison of the academic achievement of the younger entrants, as they progressed from first to second grade and from second to third grade indicated that it was not significantly different from the older entrants.[1]

Research findings by Green and Simmons are not supportive that having attained a few additional months of chronological age at the beginning of grade one is an important factor in a child's academic success.[2]

In this study there were 213 white fourth-graders who had been in the system from the beginning of first grade. There were twenty-three boys and thirty-six girls who entered school before their sixth birthday. These children are referred to as the younger group. The students for the older group were selected so that the distributions of parental occupations and intelligence test scores were very similar to those of the younger subjects.

The test results indicated that the older children made significantly higher mean scores on achievement tests than the younger children. The authors made the following comments in regard to achievement:

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[1]Beattie, Clive C. "Chronological Entrance Age as it Relates to Primary School Achievement and Personal and Social Development of the Student", Unpublished Doctorate Dissertation Ball State University, 1970.

[2]Donald R. Green and Sadie V. Simmons, "Chronological Age and School Entrance", The Elementary School Journal, LXIII (October, 1962), p. 46.

> The older pupils can be said to have learned more in school only if one assumes that the older children did not know more than the younger group at the beginning of their formal schooling. This assumption is known to be false, since scores on readiness tests show a positive relation to age.[1]

A study to obtain evidence as to possible disadvantages encountered by children who enter first grade chronologically behind the majority of their classmates was conducted by Carroll.[2] Twenty-nine pairs of children were selected from third grades in five public schools in the state of New York. They were matched on the following variables: sex, intelligence quotient, socioeconomic status of family, and insofar as possible on schools attended. Two of the major findings of the study include the following: (1) Overage children made consistently higher scores than their younger classmates on achievement and (2) boys tend to find reading more difficult than the girls. This study suggests that a few months of additional growth and development may constitute an advantage to the child when he enters school. This appears to be the only factor to explain the significantly better scholastic progress made by the overage children.

A similar study was conducted by Dickinson and Larson to determine the effects of chronological age at the time of school entrance on later school achievement.[3] The subjects were 480 fourth grade students attending the Sioux Falls Public School System. These children were selected by stratified random sampling to control such variables as kindergarten experience and experience in another school system. There were no repeaters

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[1] Ibid, pp. 42-43.

[2] Marian L. Carroll, "Academic Achievement and Adjustment of Underage and Overage Third Grades", The Journal of Educational Research, LVI (April, 1963), pp. 415-419.

[3] Donald J. Dickinson and J. Donald Larson, "The Effects of Chronological Age in Months on School Achievement", The Journal of Educational Research, LXI (May-June, 1963), pp. 492-493.

in the study. The composite score of the Iowa Test of Basic Skills was used to measure achievement.

Two approaches were used to determine the influence of chronological age on achievement. The first was to compare the younger fourth of the class to the remainder of the class; the second was to divide the class into four groups on the basis of age and then compare the younger fourth to each of the remaining groups.

They found that the younger fourth of the class had a significantly lower mean composite score on the Iowa Test of Basic Skills than did the remainder of the class. Also, the younger group had a higher mean intelligence quotient than the older group, although it was not significant.

A similar study was conducted by Nimnicht, Sparks, and Mortensen, which involved more than nine thousand students in eighty-four Colorado school districts, to determine if there is a right admission age.[1] During the first week of school the first grade students in these eighty-four school districts took the Lorge-Thorndike Test of Mental Maturity. Each child's birthdate, father's occupation, and sex was also collected. At the end of the fifth six-week period, teachers reported on the success of the children by rating each as above average, average, or below average in success.

The following were among the results of this study:

1. In every school district there was a significant relationship between intelligence quotient and academic success in the first grade.
2. Age at entrance into grade one is a factor of success, but not a very strong factor.
3. In most districts there was a significant relationship between sex and success in the first grade. Girls tended to achieve at a higher level than boys

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[1]Glen Nimnicht, Jack Sparks, and James Mortensen, "Is There a 'Right' Admission Age?", The Education Digest, XXVIII (May, 1963), pp. 34-36.

These results indicated that the variable most commonly used, age is the least reliable. The crucial question is probably not "On what basis should a child be admitted to the first grade?" but "What should we do with him once he has been admitted?"[1]

A related study was conducted by Halliwell and Stein to investigate

> the differences in achievement in the separate subject matter areas between younger and older first-grade entrants at the end of the fourth and fifth grades, and testing the hypothesis that significant differences in achievement favoring the older pupils should be expected in subject areas that are strongly reading related and that no significant differences should be expected in subject areas that are not strongly reading related.[2]

This study was conducted in a school system in suburban Long Island. Students who had begun first grade in this system and who had taken the California Short-Form Test of Mental Maturity and the California Achievement Tests, and also whose birthdays fell within the modal age group were included in the study. The modal age group was separated into two classifications: younger, those pupils entering first grade at an age of 70 to 75 months, and older, those pupils entering first grade at an age of 76 to 81 months. The sample included thirty-one older and forty-one younger fourth-grade students, and thirty-four older and thirty-six younger fifth-grade students.

Analysis of the achievement scores indicated that there is a significant difference between the scores of the younger and the older fourth grade pupils. The older pupils are significantly superior in reading areas, spelling, language, and arithmetic reasoning. There is no significant difference between the two groups in arithmetic fundamentals. Comparison of achievement

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[1] Ibid., p. 36.

[2] Joseph W. Halliwell and Belle W. Stein, "A Comparison of the Achievement of Early and Late School Starters in Reading Related and Non-Reading Related Areas in Fourth and Fifth Grade", Elementary English, XLI (October, 1964), pp. 631.

scores for the younger and older students in the fifth grade show that the older students were superior, at a level of significance, in all areas, except arithmetic fundamentals.

These findings substantiated several earlier investigations "that pupils who entered school early were significantly poorer in achievement than were pupils who entered school later."[1]

Binkley conducted an analogous study which involved the exploration of several open questions regarding entrance variables of culturally deprived children.[2] This research explored first grade entrance variables as they related to fourth grade achievement and personality adjustment of one thousand one hundred ten pupils from thirty-nine schools. School entrance variables included: chronological age, readiness level, sex, and race. All subjects were born in the same calendar year and entered school in the fall of 1962. Binkley concluded that entrance age as it relates to later elementary school achievement is not an extremely important factor. First grade readiness level was highly significant as it related to later achievement.

The majority of the research relating to entrance age of students as it relates to later school achievement indicated that children who entered school at an early age had more academic problems than later entrants. Some researchers stated that more consideration must be given to what we do with the child once he has been admitted to school. Instruction must be tailored to the developmental level of each child.

Personal and Social Adjustments of the Students

Teachers frequently express concern that underage children may have difficulties in emotional and social adjustment, i.e., in adjusting to standards of group behavior, forming friendships with older children, being away from home for long periods, and meeting group work standards. The social interaction and interpersonal relationships among children are of importance to educators.

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[1] Ibid., p. 638.

[2] Marvin E. Binkley, "First Grade Entrance Variables Related to Achievement and Personality" (unpublished doctoral dissertation, University of Tennessee, 1967).

In the lives of kindergarten children, for example, Hamalainen saw adjustment to school as a significant problem.[1] A total of thirty-three kindergartens with an enrollment of four thousand two hundred seventy-seven students was included in this study. The minimum desirable entrance age to kindergarten was four years and nine months, but it was discovered that 16.5 percent of all children in these schools were underage. From this group of underage children 76 percent made a ready adjustment in kindergarten as contrasted with 94 percent of those over four years and nine months of age who adjusted readily. The author stated that one out of every four children who entered school younger than the assumed desirable entrance age failed to make a ready adjustment as compared with only one child out of sixteen of normal entrance age. This fact may indicate that the child under four years and nine months old is not ready for school as it is presently organized. In the same study Hamalainen found that both underage and overage children face more social and emotional problems than children of normal age.

Studies by Carter[2] and King[3] supported the hypothesis that children who entered kindergarten or grade one at an early age have more academic and school adjustment problems than later entrants. King's study was based on a group of fifty-four children who entered Grade 1 when they were between the chronological age of five years and eight months and five years and eleven months and an older group of fifty children who were between six years and five months and six years and eight months of age. These children had been enrolled in the Oak Ridge schools for six years and their intelligence quotients fell within the range of 90-110.

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[1]Arthur E. Hamalainen, "Kindergarten-primary Entrance Age in Relation to Later School Adjustment", The Elementary School Journal, LII (March, 1952), pp. 406-411.

[2]Lowell B. Carter, "The Effect of Early School Entrance on the Scholastic Achievement of Elementary School Children in the Austin Public Schools", Journal of Educational Research, L (October, 1956), pp. 91-103.

[3]Inez B. King, "Effect of Age of Entrance into Grade 1 Upon Achievement in Elementary School", The Elementary School Journal, LV (February, 1955), pp. 331-336.

The cumulative folder of each of the one hundred four students was reviewed and the following data was collected:

1. The total achievement scores.
2. The number of days present for each of the six school years.
3. Referrals, if any had been made, to the school psychologist for special help.
4. Referrals, if any had been made, to corrective speech class.
5. Teachers' comments suggesting personal or social maladjustment in a child. . . .
6. Teachers' comments indicating good personal adjustment in the child and his ability to work with a group with wholesome social relationships.[1]

The findings, in reference to the social and personal adjustment of the students, indicated that the younger children had more speech defects, nervous indications, and personal and social maladjustments than the older children.

> This study would seem to indicate that having attained a few additional months of chronological age at the beginning of Grade 1 is an important factor in a child's ability to meet imposed restrictions and tensions that the school necessarily presents.[2]

In a similar attempt to study the adjustment of children young for their grade placement, Miller[3] selected one hundred thirteen such students located from kindergarten through Grade 7. The children ranged in age from four years six months to eleven years and eight months.

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[1] Ibid., p. 333.

[2] Ibid., p. 336.

[3] Vera V. Miller, "Academic Achievement and Social Adjustment of Children Young for Their Grade Placement", The Elementary School Journal, LVII (February, 1957), pp. 257-263.

The teachers rated these children on

> general health, illness, physical size, nervousness or anxiety, special ability, leadership, popularity, faults of personality, favorable personality traits, significant events in child's life, ambition, drive, persistence, judgment, self-confidence, conformity, father's occupation, and mother's activities.[1]

Analysis of the results indicated that these children, on the whole, were well adjusted socially. They scored well above average in popularity, leadership, and favorable personality traits.

An attempt was made by Miller to assess peer acceptance of rejection of the under-age children by the use of a sociometric rating scale. Thirty children young for their grade placement were compared with three hundred eight average-age students. These students were in the sixth grade. The findings indicated that

> there were no differences of statistical significance between the two groups in any of the eleven choices on the sociogram. This finding suggests that, in the opinion of classmates, there is no detectable difference between the under-age and the average-age child at sixth grade level.[2]

Miller concluded that

> chronological age is not so important in the academic, social and emotional adjustment of the child as many people think. The under-age child may do very well in school. . .The fact is that children of the same chronological age differ widely in other developmental ways and that, in the final analysis, each child must be considered individually.[3]

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[1] Ibid., p. 261.
[2] Ibid., p. 262.
[3] Ibid.

A large scale study of underage first graders was conducted by Devault.[1] The study involved middle and upper status Anglo-American neighborhoods. Underage first graders were operationally defined as those children who entered school in September, who had not reached their sixth birthday. Social adjustment was studied for children in grades two, four, and six. Some major findings of this study include the following:

> (1) Pupils not more than two months underage tended to have higher sociometric status scores than younger pupils. (2) There was only slight evidence that personal, social, or total personality adjustment as measured by the California Test of Personality was related to chronological age.[2]

The research study by Beattie which was reported earlier also measured the personal and social adjustment of 387 students at the end of third grade. This was measured by using the California Test of Personality. Achievement was measured by the Stanford Achievement Tests and intelligence by the Otis-Lennon Mental Ability Test. This study differs from many of the others in that personal and social adjustment was measured by using a noun referenced instrument as most of the other researchers used subjective criteria. Subjective criteria is generally not acceptable for research data.

Baer matched seventy-three underage pupils with seventy-three overage pupils and studied their school progress and social adjustment.[3] Baer found that the girls consistently received higher marks and that teachers rated girls higher on personal traits. In fact, the difference between boys and girls was greater than between the overage and underage groups in three out of seven traits. Baer concluded that although underage children, as a group, make average marks in subjects and received average ratings

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[1] M. Vere Devault, Elmer C. Ellis, Edward M. Vodicka, and Henry J. Otto, Underage First Grade Enrollees (Austin: The University of Texas, 1957).

[2] Ibid., p. 118.

[3] Clyde J. Baer, "The School Progress and Adjustment of Underage and Overage Students, Journal of Educational Psychology, XLIX (February, 1958), pp. 17-19.

by their teachers on personal traits and did not mark significantly more problems on the problem inventory than did the overage students, it would still be better for the underage children to wait until the next year to begin school.

A study conducted by Weiss involved the

> evaluation of the achievement and adjustment of selected emotionally and socially mature children with an I.Q. of at least one standard deviation above the norm in the Standard Binet test who were admitted at an early age, by a testing program, into kindergarten classes specifically conducted for normal-age children.[1]

The study consisted of thirty-five selected young children and one hundred sixty-one normal-age children. These children were matched on intelligence quotient, personality adjustment, and sex. The test administered were the California Test of Mental Maturity and the California Test of Personality.

The achievement and adjustment of the control and experimental groups were compared by using the scores obtained from the California Test of Personality, a sociometric test, and the Teacher Rating Scale at the end of the school year. Analysis of the results indicated that the young children performed lower on "rating scale grades, personality scores, and social status than the normal-age children of comparable I.Q. and who had matching personality scores at the beginning of the school year".[2]

A study to obtain further evidence as to possible disadvantages encountered by children who enter first grade chronologically behind the majority of their classmates was conducted by Carroll.[3] The researcher selected twenty-nine pairs of children from third grades of five public elementary schools of upstate New York. They were matched on sex, intelligence quotient,

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[1]Rosalee G. Weiss, "The Validity of Early Entrance into Kindergarten", The Journal of Educational Research, LVI (September, 1962), p. 54.

[2]Ibid.

[3]Marian L. Carroll, "Academic Achievement and Adjustment of Underage and Overage Third Graders", The Journal of Educational Research, LVI (April, 1963), pp. 415-419.

socioeconomic status of family, and insofar as possible on schools attended. The findings show that the teachers' ratings of adjustment tended to be more favorable to the overage children. Carroll suggests that it may be advantageous to the young child to have his formal education postponed a few months as this appears to be the only factor to explain the significantly better scholastic progress made by the overage children in this study.

McCarthy conducted an analogous study in which he investigated pre-entrance variables and school success of underage children.[1] Twelve pre-entrance variables were specified and studied. These were intelligence, reading readiness, home environment, home instruction, sibling relationships, types of group experiences, relationships in groups, self-reliance, emotional stability, health, physical characteristics, and motor coordination. The relationship between the above variables, academic achievement, and social adjustment were studied. McCarthy found that:

> for boys, only one variable was found to be significantly related to success that included both social and achievement criteria - environment. For girls seven of the pre-entrance variables were found to be significantly related to success in achievement criteria and in social adjustment criteria. These were intelligence, reading readiness, home environment, home instruction, relationships in groups, self-reliance, and emotional stability.[2]

SUMMARY

In this country chronological age has been used almost exclusively as a criterion for initial school entrance. A survey conducted by the National Education Association, in 1968

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[1]Daniel J. McCarthy, "Pre-entrance Variable and School Success of Underage Children", Harvard Educational Review, XXV (Fall, 1955), pp. 266-267.

[2]Ibid., p. 268.

show that the most frequently reported minimum entrance age requirement was five years by December 1 and the second most frequent age was five years by January 1.

The relationship between age, mental age, and school success has been reported in studied by Hildreth, Bigelow, and Dickinson and Larson. A general conclusion by the above was that both chronological age and mental maturity should be considered in setting school entrance policies. Research findings by Green and Simmons state that although achievement is related to entrance age, it does not prove that it would be profitable to raise the minimum age for school entrance.

Results of studied by Partington, Baer, Carroll, Nimnicht, Sparks, and Mortensen, and Halliwell and Stein have indicated that children who entered school at an early age had more academic problems than later entrants. Devault found that pupils more than two months underage had lower achievement test scores than normal age pupils. Studied by Hampleman and Miller found that difference in achievement between the early and late school starters were not statistically significant. A study conducted by Binkley supports the general conclusion reached by Hampleman and Miller.

The concern that underage children may have difficulties in emotional and social adjustment has resulted in several studies. Hamalainen, Carter, King, Weiss, and Carroll concluded that children who entered kindergarten or grade one at an early age had school adjustment problems to a greater degree than later school entrants. Baer found that underage children received average ratings by their teachers on personal traits and did not mark significantly more problems on the problem inventory than did the overage students.

Miller, Devault, and McCarthy discovered that underage students held their own in personal and social adjustment scores when compared with normal age enrollees. Miller and Beattie stated that the young child is capable of good school progress, both academic and social.